WHAT IS CLAIMED IS:

1. A rotor, comprising at least one rotor blade (B1, B2, B3, B4; B5) connectable to a rotor head (2), which rotor blade possesses a blade neck (8) having a virtual flapping hinge in the form of a flexurally soft, flexurally elastic blade-neck portion, there being provided, in a blade-connector region (12, 14; 16; 30, 32) of the blade neck (8), two auxiliary flapping hinges (H1, H2), spaced apart from one another in the radial longitudinal direction of the rotor blade (B1, B2, B3, B4; B5) with reference to a rotor radius (R), between which the virtual flapping hinge is substantially disposed and between which the blade neck (8) is deformable in flexurally elastic and curved fashion in the context of a flapwise motion.

2. The rotor as recited in Claim 1,

wherein the blade neck (8) possesses a further flexurally soft, in particular flapwise-soft, blade-neck region (22) in a region that is adjacent, in the direction toward a rotor-blade tip, to the radially outer of the two auxiliary flapping hinges (H1, H2) with reference to the rotor radius (R) and the longitudinal direction of the rotor blade (B1, B2, B3, B4; B5).

3. The rotor as recited in Claim 1 or 2,

wherein it is a hingeless rotor that possesses, in addition to the virtual flapping hinge, a virtual lead-lag hinge in the form of a flexurally soft, flexurally elastic blade-neck region (30).

4. The rotor as recited in one or more of the aforementioned Claims,

wherein it is a bearingless and hingeless rotor having a virtual flapping hinge, a virtual lead-lag hinge, and a torsionally soft blade neck (12, 14, 22, 24) for bearingless blade angle adjustment.

5. The rotor as recited in one or more of the aforementioned Claims,

wherein the flapping hinge distance is greater than or equal to zero (>= 0).

6. The rotor as recited in one or more of the aforementioned Claims,

wherein the flapping hinge distance is less than zero (< 0), i.e. negative.

7. The rotor as recited in one or more of the aforementioned Claims,

wherein the virtual flapping hinge is located in a region of the blade neck (8) between the two auxiliary flapping hinges (H1, H2).

8. The rotor as recited in one or more of the aforementioned Claims,

wherein the two auxiliary flapping hinges (H1, H2) simultaneously form two auxiliary lead-lag hinges, spaced apart from one another in the radial longitudinal direction of the rotor blade (B1, B2, B3, B4), between which the virtual lead-lag hinge is disposed and between which the blade neck (8; 30) is deformable in flexurally elastic and curved fashion in the context of a lead-lag motion of the rotor blade (B1, B2, B3, B4).

9. The rotor as recited in one or more of the aforementioned Claims,

wherein the lead-lag hinge is embodied in lead-lag-stiff fashion.

10. The rotor as recited in one or more of the aforementioned Claims,

wherein at least one of the auxiliary flapping hinges (H1, H2) has a rotary articulation (18).

11. The rotor as recited in one or more of the aforementioned Claims,

wherein at least one of the auxiliary flapping hinges (H1, H2) is formed by a flexurally soft, flexurally elastic portion (12, 14) of the blade neck (8).

12. The rotor as recited in one or more of the aforementioned Claims,

wherein at least one of the auxiliary flapping hinges (H1, H2) is formed by a support device supporting the blade neck (8) in the region of the auxiliary flapping hinge (H1, H2).

13. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B2, B3, B4; B5),

wherein the at least two rotor blades (B1, B2, B3, B4; B5) are joined to one another in the region of their respective blade neck (8; 12, 14).

14. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B2, B3, B4; B5),

wherein the at least two rotor blades (B1, B2, B3, B4; B5) possess common auxiliary flapping hinges (H1, H2) that lie in a common blade-neck joining region (16, 18).

15. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B3; B2, B4) that each lie at an offset from one another of approximately 180 degrees with reference to the rotor disc and form a rotor blade pair (B1, B3; B2, B4),

wherein the respective rotor blade pair (B1, B3; B2, B4) possesses two common auxiliary flapping hinges (H1, H2) and one common virtual flapping hinge.

16. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B2, B3, B4),

wherein

- the blade-connector region of the blade neck of a respective rotor blade (B1, B2, B3, B4), which region contains the two auxiliary flapping hinges (H1, H2) and the virtual flapping hinge located therebetween, is embodied in the form of a single blade-connector arm (30);

- the single blade-connector arm (30) of a respective rotor blade (B1, B2, B3, B4) extends alongside the rotor axis (A) and past it, and is joined to an intermediate portion (32) of a respectively adjacent, similarly configured rotor blade (B1, B2, B3, B4).

17. The rotor as recited in one or more of the aforementioned Claims,

wherein the blade-connector region of the blade neck (8), which region contains the two auxiliary flapping hinges (H1, H2) and the virtual flapping hinge located therebetween, is embodied in the form of a blade-connector fork (10) having at least two centrifugal-force-discharging connector arms (12, 14).

18. The rotor as recited in one or more of the aforementioned Claims,

wherein in a view directed onto the rotor-disc plane, the rotor axis (A) extends between the at least two connector arms (12, 14).

19. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades,

wherein the rotor blades (B1, B2, B3, B4, B5) are joined to one another via their connector arms (12, 14).

20. The rotor as recited in one or more of the aforementioned Claims,

wherein of the at least two connector arms (12, 14) of a rotor blade (B1, B2, B3, B4, B5), at least one possesses an arm end, embodied as a fork terminal (26), that engages in the region of an auxiliary flapping hinge (H1, H2) and is joined (18) to a connector arm region of a connector arm (12, 14) of a respective other rotor blade (B1, B2, B3, B4, B5).

21. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades,

wherein at least one connector arm (14) is divided into at least two connector arm segments (14a, 14b) located one above another.

22. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B2, B3, B4, B5),

wherein the at least two rotor blades (B1, B2, B3, B4, B5) are joined to one another via their blade-connector forks (10), and at least one subregion (12, 14; 14a, 14b) of the blade-connector fork (10) of the one rotor blade (B1, B2, B3, B4, B5) receives centrifugal forces of the respective other rotor blade (B1, B2, B3, B4, B5).

23. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades,

wherein the connector arms (12, 14) of the at least two rotor blades (B1, B2, B3, B4, B5) joined to one another via their blade-connector forks (10) overlap (16) at least in subregions.

24. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B2, B3, B4, B5),

wherein one respective auxiliary flapping hinge (H1; H2) is located in an overlap region (16) of the connector arms (12, 14; 14a, 14b) of the at least two rotor blades (B1, B2, B3, B4, B5).

25. The rotor as recited in one or more of the aforementioned Claims,

wherein the at least two connector arms (12, 14) of a rotor blade (B1, B2, B3, B4, B5) extend in different planes.

26. The rotor as recited in one or more of the aforementioned Claims,

wherein the connector arms (12, 14; 14a, 14b) are strip- or plate-shaped.

27. The rotor as recited in one or more of the aforementioned Claims,

wherein the at least one rotor blade (B1, B2, B3, B4, B5) is nonrotatably joined in the region of the two auxiliary flapping hinges (H1, H2), via a torque-transmission element (4; 18), to a rotor mast (6).

28. The rotor as recited in one or more of the aforementioned Claims, having at least two rotor blades (B1, B2, B3, B4, B5),

wherein the torque-transmission element (18) engages at a portion (16) on the rotor blades (B1, B2, B3, B4, B5) at which multiple connector arms (12, 14) overlap (16) and in which at least one of the auxiliary flapping hinges (H1, H2) is located.

29. The rotor as recited in one or more of the aforementioned Claims,

wherein the torque-transmission element (4) is flexurally soft in the flapwise direction of the at least one rotor blade (B1, B2, B3, B4, B5).

30. The rotor as recited in one or more of the aforementioned Claims,

wherein the rotor blade (B1, B2, B3, B4, B5) has in the blade-connector region (12, 14; 16; 30) at least two centrifugal-force-discharge elements (18), spaced apart from one another in the longitudinal direction or centrifugal-force direction, of which at least one (18) receives, during continuous operation of the rotor, the centrifugal forces occurring at the rotor blade (B1, B2, B3, B4, B5).

31. The rotor as recited in one or more of the aforementioned Claims,

wherein at least one of the two auxiliary flapping hinges (H1, H2) spaced apart from one another in the longitudinal direction of the rotor blade (B1, B2, B3, B4, B5), or parts (18) of them, are configured as a centrifugal-force-discharge element.

32. The rotor as recited in one or more of the aforementioned Claims, having multiple rotor blades (B1, B2, B3, B4, B5),

wherein the rotor blades (B1, B2, B3, B4, B5) are joined to one another in the region of their auxiliary flapping hinges (H1, H2), and at least one respective auxiliary flapping hinge (H1, H2), or a part thereof, of a respective rotor blade (B1, B2, B3, B4, B5) is embodied as a

centrifugal-force-discharge element for at least one respective other rotor blade (B1, B2, B3, B4, B5).

33. A rotorcraft, in particular a helicopter, in particular a tiltrotor helicopter, having at least one rotor as recited in one or more of Claims 1 to 32.